The Pathological Nasal Reflex.

An Historical Study

BY

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BALTIMORE.

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"Nullum est jam dictum, quod non dictum sit prius."—TERENCE.

"Multa renascentur, quæ jam cecidere."—HORACE.

WITHIN the past few years the attention of the medical world has been more prominently called to a series of morbid phenomena, some directly referable to the nasal apparatus, others to regions of the body more or less remote from the nose, which seem to depend upon irritation or well-marked structural changes in the intra-nasal tissues, and which not infrequently disappear after removal of the source of irritation within the nasal cavities. These seemingly purely neurotic conditions have received the name of the *nasal reflex neuroses*, and embrace a host of sensory, motor, and vaso-motor phenomena, varying greatly in nature and anatomical sphere of operation. Various neuralgic conditions of the branches of the fifth and other nerves—cough, asthma, vertigo, nightmare, "hay fever," various spasmodic affections, general convulsions, diseased states of the nose, eye, ear, larynx, and bronchial tubes, symptoms referable to

* Read before the American Laryngological Association at its sixth annual congress.

irritation of the gastro-intestinal, utero-ovarian, and genito-urinary tracts; even chorea, epilepsy, melancholia, retarded sexual development, and exophthalmic goître—have been mitigated or known to disappear with the cure of the nasal affection.

While in some of the recorded instances of these "reflex nasal neuroses" the enthusiasm and hasty judgment of the reporters have carried them too far, and while in many cases the direct connection between the nasal disease and the reflected phenomena is not sufficiently evident, still the fact is established beyond a reasonable doubt that a causal relationship does often exist between certain conditions of the nasal passages and other portions of the respiratory tract, and a host of phenomena referable to other and remote organs of the body—a direct dependence or connection which justifies us in the belief of their reflex reciprocal relationship.

At the present day, when, by common consent, our knowledge of this class of affections is confined within the narrow limits of scarcely two decades, it may be interesting to glance for a moment beyond the writers of the present epoch to the literature of more distant times.

In the "Symposium" * of Plato, when the time came for Aristophanes to speak, he was seized with the hiccoughs, and, upon requesting Eryximachus to stop them and speak in his stead, was told that, if the hiccoughs were ever so violent, if the nose were tickled they would cease at once. This popular recognition of the sympathy between the nose and diaphragm is also distinctly affirmed in the sixth book of the aphorisms of Hippocrates: "If sneezing comes upon a man in a fit of the hiccoughs, it puts an end to the disorder." †

* Section 13.

† Aph. 13. Compare also Celsus, lib. ii, cap. 8.

The consensus or sympathy between the nose and eye seems also to have attracted popular attention. Thus, Aristotle* devotes two paragraphs of the thirty-third section of his "Problems" to the consideration of the question why rubbing the canthi of the eyes puts an end to sneezing. Avicenna,† to prevent sternutation, recommends rubbing the eyes, ears, extremities, and palate, whilst Rhazes,‡ in his chapter on acute and chronic obstruction of the nose ("De aleasem"), mentions, among the symptoms of the latter, abrogation of the sense of smell with a co-existing diseased condition of the eyes. Rhazes also recommends the induction of sneezing "when the mouth is convulsed and drawn to one side,"§ and mentions the fact that rubbing at the nose, a cold in the head, and hoarseness may occur from the odor of violets, etc.‖ The relation of certain affections of the head, and notably hemicrania, to congestive and even inflammatory disorders of the nasal apparatus, seems also to have been foreshadowed in the writings of the earlier physicians. Thus, in the "Medical Compositions" of Scribonius Largus¶ is found the following direction for the cure of certain forms of headache: "*Oportet vero perunctis capitis dolore, anteriora quoque detrahere et in per nares mal as.*"

* Opera omnia graece et latine, vol. iv, Problemata sectio 2 et 3, Parisiis, 1858. Ed. Didot.

† Opera omnia, Venet., 1608, lib. iii, Fen 3, tract 2, cap. 14.

‡ "Opera medica," Basileæ (date uncertain), 1544 or 1579, Lib. 8, G. O.). Divisionum, lib. i, cap. 48.

§ *Op. cit.*, "Ad numer. de re med.," lib. ix.

‖ *Ibid.*, cap. xiii.

¶ Scribonius Largus, "De compositionibus medicamentorum liber unus," Parisiis, 1528. Ed. Vonckel, Cap. vi.

The ancients included under the generic term headache the affections known as cephalalgia, cephalea, and hemicrania or heterocrania, the latter term being employed by Aretæus ("De caus. et sig. morb. chron.," liber i, cap. 2). Aretæus says the sense of smell is vitiated in heterocrania.

Largus (Composition X) advises sternutation as a remedy for headache.

The dependence of catarrh, coryza, asthma, syncope, convulsions, and a host of other phenomena upon the presence or odor of roses, lilies, peonies, and other flowers, has been recognized for centuries. For, although Pliny * informs us that the seed of the rose inhaled into the nostril has the effect of clearing the brain, there are many cases to be found among the older writers in which the odor of various substances, such as the rose, was known to result in epilepsy, syncope, and even death, † and there is a tradition that the Roman ladies conceived an especial aversion to the odor of the queen of flowers.

The diagnostic acumen of Galen ‡ led him to the observation that in certain persons the presence of various foods is sufficient to excite a coryza, and scattered here and there through the literature of succeeding centuries isolated cases

* "Nat. hist.," lib. xxi, cap. 73. The same writer (lib. vii, cap. 7) also observes that the smell of a lamp which has been extinguished will often cause abortion, and that the latter ensues should the female happen to sneeze just after the sexual congress.

† While there is a remote possibility that this observation of the ancients, which finds its reflection in the poetic imagery of Pope, may have some slight foundation in fact, it is extremely doubtful whether, in the cases referred to, death was due to the simple inhalation of the odorous particles of the flower, for in some of the recorded instances the victims were confined to closed chambers, and were possibly poisoned by the displacement of the oxygen of their bedrooms by the noxious exhalations from the plants. It should also be remembered that our less civilized and punctilious brother-man of a few centuries back did not hesitate to dispose of an enemy through the covert instrumentality of poisoned flowers and other equally insidious devices, by means of which the deadly agent was introduced into the system through the respiratory mucous membrane.

‡ "Fragment. ex aphor. Rabi Moyses." Good, "Study of Medicine," Boston ed., 1823, vol. i, p. 311.

are found in which similar peculiarities in regard to flowers and other objects are recorded.*

In the light of our present knowledge of the affection known as "hay fever," it is scarcely conceivable that it made its first appearance at the beginning of the present century. As Dick, and afterward Matthew Baillie, thought that in describing their first cases of laryngitis they had discovered a new disease, so Bostock, in portraying the symptoms of "*catarrhus æstivus*," was led into a similar error. For no one can arise from the perusal of the older writers on asthma without the conviction, or at least the suspicion, that this disease has descended to us through the centuries as a species of the "convulsive asthma" and "periodic coryza" of the more ancient nosologists, who in their state of medical science did not resort to the nosological refinements which proceed from the more advanced pathological research of the present day and century.

I have shown elsewhere† that the so-called "idiosyncrasy," by virtue of which the presence or odor of certain flowering plants is sufficient to create disturbances referable to the nasal chambers and other portions of the respiratory apparatus, was familiar at a remote period of medical history. In the days when medical writings were published in Latin, the necessity of recording one's observations in a foreign tongue led to a tiresomeness of style and incompleteness of description which often surrounded with uncertainty the exact nature of the cases reported; but, whether the records referred to were examples of true vaso-motor coryza

* In certain individuals, or even families, this peculiar antipathy or susceptibility to particular flowers or fruits takes the form of nose-bleed, in others violent purging occurs, or even epileptoid convulsions.

† "Trans. of the Med.-chir. Fac.," 1882. "Am. Journal of the Med. Sciences," January, 1886.

or not, they may be placed in the same category of affections, and the predisposing influences be considered identical with those provocative of the disease called in the present century "rose-cold."

To Voltolini (1871) is universally and erroneously attributed the credit of pointing out the interesting relationship between asthma and nasal disease. I pointed out at the last meeting of this association,* however, from the writings of Aurelian, Zecchius (1650), Schneider, Floyer (1726), Bree (1811), Trousseau, Follin and Duplay, and Ferber (1869), that the association of these two conditions was known long before the time of Voltolini. Among these writers, Ferber, referring to the frequent association of sneezing, migraine, hay fever, and bronchial asthma, advanced the theory that these phenomena were the expression of a neurosis of the trigeminus nerve—a view which has recently been resurrected in a modified form by Schadewaldt.

The association of epileptoid seizures, or even true epilepsy, with some irritation in or about the nasal passages, or peculiar susceptibility on the part of certain individuals to be thrown into epileptic convulsions through the application of some forms of matter to the nasal mucous membrane, seems to have been familiar from the earliest times. We learn, for example, from Aretæus ("De causis acut. morborum," lib. i, cap. 1, ed. Boerhaave, Ludg. Bat., 1735) that the gagate stone (a species of hard coal or jet) was utilized by the ancients as a test for epilepsy, for when applied to the nostrils the sufferer was thrown into epileptoid convulsions. Pliny (lib. xxxvi, cap. 34) also alludes to this test, and to the power of the smell arising from burning goat's horns or deer's antlers in accomplishing the same

* "N. Y. Medical Journal," February 26, 1887; also "Trans.," 1886.

result (lib. xxviii, cap. 63). According to this historian, the secundines of a she-ass, placed under the nostrils of the patient when the fit is approaching, will effectually dispel it. It is also a curious historical fact that Avicenna ("Op. omn.," Venet., 1608, lib. iii, Fen. i, tract v, cap. 8, p. 499) mentions (*l. c.*, Fen. 5, tract ii, cap. 15, p. 585) "rosa cum suis pilis" among the milder measures resorted to to provoke sternutation, and regarded sneezing itself as a mild form of epilepsy (*epilepsia levis*), and that a similar opinion was entertained long afterward by the learned Fernelius ("Medicina," Lutetiæ Parisiorum, 1554, "De epilepsia").

Fernelius treated also of the association of hemicrania and catarrh, which, in the quaint * language of his translator, was supposed to be due to "a vapor which, arising from choller flowing out of the liver into the stomach, does smite and twitch the membranes of the brain, yielding matter peradventure to the distillation." Elsewhere † he reports the case of a boy eleven months old, who was sick of a catarrh, who "sneked much and pissed little," and who was cured by anointing the region of the kidneys with oil of scorpions, which caused a flow of urine and the cure of his catarrh. Fernelius observes that in the eighth book of Mesuetus on "Diseases of Children" it is stated that catarrhs sometimes happen in children from weakness or fault of the kidney. Further on (p. 65) he gives a case in which suppression of urine was supposed to proceed from a catarrh in the head: "the flowing humor had invaded the body of the bladder and bred some tumors therein, by which the sphincter of the bladder was compressed and the passage of the said bladder made straight."

* "Select Medicinal Counsels of Johannes Fernelius," found with the Works of Riverius, London, 1695. Author's library, General III, p. 325.

† Page 85.

In the seventeenth century Salmuth * called attention to the fact that paroxysms of epilepsy are often resolved by the eruption of blood from the nose, and related a case of "periodic paralytic tremor" in a woman of fifty, dependent probably on a subacute form of catarrh.

In 1656 Bausner † wrote an essay devoted to the consideration of the sympathies between the different parts of the body, in which he alludes briefly to the relation between affections of the stomach and coryza, and to the effect of obstruction of the nostrils on the voice and respiration.

In 1682 Wedel ‡ treated of the association of vertigo and sneezing, and in the same year Van Helmont,# in several chapters of his work, discussed the effects of sweet odors in the production, not only of epilepsy, but headache, nausea, vomiting, cough, hiccough, vertigo, apoplexy, dysentery, and other affections. He also alludes to the fact that, while sweet odors give rise to asthma in some, in others they produce, instead of asthma, hemicrania, palpitation, and syncope. This writer regards such disturbances as of frequent occurrence, and is looked upon by some as the first to recognize the affection known as "hay asthma." ‖

* "Observationum medicarum centuriæ tres postbumæ," Brunsvigiæ, 1648, cent. ii; obs. 13, p. 65; and obs. 60, p. 87.

† Bartholomy Bausner. "De consensu partium corporis humani," lib. ii, cap. 2. Amstelodami, 1656.

‡ "Dissertat. aeger vertigine laborans," Ienæ, 1682. "Diss. de vertigine," Ienæ, 1707 and 1711.

Johan Baptist Van Helmont. "Op. omnia," Francofurti, 1682. "Imago fermenti impregnat massam semine," p. 110, § 10; p. 341, § 10; and p. 348, § 41. This author also refers to the case of a monk, employed in pulling down buildings, who grew asthmatic from the constant inhalation of dust.

‖ Bergeron. Thèse d'agrégation, 1872, referred to by Louis Villemsens. Thèse de Paris, No. 191, 1872. "Étude sur le cat. spasmodique d'été," etc.

He explains the mechanism of such attacks by the operation of the "archeus," on the fantastic theory with which his name is inseparably associated in medical history.

Two cases of probable "rose-cold" were related toward the close of the seventeenth century by Binningerus* and his contemporary Lochlius,† and Pechlinus‡ reported the case of a pharmacist who was thrown into violent paroxysms from the odor of violets in his urine, and was only relieved upon the return of the natural odor to the excretion. The same writer relates another case, in which a woman, having taken saffron for some menstrual trouble, was seized with coryza, headache, sneezing, and other annoying symptoms.§

In the early part of the last century Baglivi‖ called attention to the fact that irritation of the nostrils by snuff (or tobacco) might provoke a desire to go to stool. This same observer also called attention to the association of asthma and urticaria.¶

A few years after the publication of Baglivi's work, Gumprecht◊ discussed the sympathetic troubles connected

* Johan Nicolai Binningerus. "Observationes medicæ, raræ, quinque," etc. Moenofrancofurti, 1676. Obs. 80, p. 227. I am indebted for this reference to the work of Dr. Morell Mackenzie—"Hay Fever," etc., London, 1883. Third edition, p. 48.

† "Monstrum nec ante," Dec. ii, anno i, Obs. 140. This case is not infrequently referred to by the writers of the last century, and also by Paulus C. Dorotheus Frahmannus Kornerup," etc., Giessen, 1662; and Morell Mackenzie (*op. cit.*).

‡ Joh. Nicol. Pechlinus. "Observationum physico-medicarum libri tres," etc. Hamburgi, 1691, lib. ii, obs. 30, p. 432.

§ *Op. cit.*, lib. i, obs. xli, pp. 94–96.

‖ "Opera omn. med. practica," Lugd., 1714, apud. lib. i, cap. x, p. 242 *et seq.*

¶ *Op. cit.*, p. 104.

◊ Georg Gottlieb Gumprecht, "Diss. de consensu partium præsertim [illegible] et praxeos medicæ fundamento." Halæ-Magdeburgicæ, 1717.

with the inhalation of vapors into the nostrils, and explained them on the theory that the vapor taken into the nose affected preternaturally the branches of the fifth pair of nerves and was reflected to the fauces, stomach, heart, and lungs through the medium of the intercostal and eighth pair (Willis).

This nerve theory, which was the outcome of the neuropathology of Willis * and Vieussens,† was subsequently insisted upon by Henricus Josephus Rega in an elaborate general discussion of the sympathies between the different organs of the body.‡

Rega mentions the sympathy of the uterus and fauces, and that between the fauces and parts lower down.

During the first part of the last century there appeared a ponderous work by Johan Jacob Wepfer # consisting of a collection of cases illustrative of the external and internal diseases of the head, in which the relationship of hemicrania and other pathological phenomena to nasal inflammation and obstruction was distinctly and emphatically announced. Nothing seems to have escaped the far-reaching experience and accurate observation of this writer, to whose powers of description and diagnostic acumen it would be difficult to do justice within the limits of this review. So instructive is every case and page that it would be hard to make a selection, and I shall therefore only refer briefly to the following:

* "Cerebri anatome cui accessit nervorum descriptio et usus." Amstelodami, 1666, inter al. capp. 21, 25, 26, and 27.

† "Neurographia universalis." Lugduni, 1685, lib. iii, caput v, de nervis intercostalibus, eorumque muniis.

‡ "De sympathia seu consen. part. corp. humani, ac potissimum ventriculi, in statu morboso, diss. medica." Harlemi, 1721.

"Observationes medico-practicæ de affectibus capitis internis et externis." Scaphusii, 1728.

Obs. xxxiv, pp. 75, 76. Association of cephalalgia with sternutation, screatus, cough, and coryza, supposed to be due to irritation of the dura mater.

Obs. xxxvi, pp. 80–82. Paroxysms of violent headache, vertigo, pain from the nucha to the head, debility of memory and vision, tremor, cough, pain in the eye and about the nose, due to obstruction of the nostril from abuse of tobacco, which caused retention of mucus within the nostril, and awakened the above-mentioned symptoms from the sympathy of the latter with the meninges about the torcular Herophili. In this case the mucus retained in *the deeper portions of the nostrils* (*profunde intra cavernas narium retentus et inspissatus ab acre et calamis expirato pruvenit*) was supposed to draw the meninges into consent.

Obs. xxxviii, pp. 84, 85. Association of pains in head, tinnitus, pains in humerus, various nervous symptoms and vomiting, with inflammation of the fauces. A very interesting case.

Obs. xl, p. 94. Says he has frequently observed hemicrania due to obstruction of the nares.

Obs. xlii, pp. 100–102. Case in which intense paroxysms of periodic cephalalgia and hemicrania were preceded by stupor of the head with gravedo. The patient suffered from obstructed nostrils, with tendency to somnolence and delirium. When the acme of the paroxysm was reached, vomiting of a tenacious mucus with bile occurred, with relief to the symptoms.

Obs. xliii. Case of a man suffering from obstructed nares, who was troubled for seven years with daily pain in the head in the morning when he arose from his couch, to which were soon added heaviness of vision, vertigo, tinnitus aurium, debility of the joints, with tremulous movements of the same. These symptoms were relieved by drawing the mucus from the head and nose into the fauces. The mucus was removed with difficulty owing to the narrowness of the nostrils from obstruction. He explains the case on the theory of sympathy and laxity of *the pores in the spongy bones*. Wepfer believes the trouble to have been an invasion of the spongy (turbinated) bones, and observes that in such cases the indication is to re-

move the inspissated mucus from the nares. A most interesting case.

Obs. xliv. Hemicrania from an acrid serous discharge.

Obs. xlvi, pp. 109–125. Headache, cough without expectoration, asthma, palpitation of the heart, and signs of phthisis. Tubercles in the lung were suspected "because crude tubercles were seen in the fauces at the root of the tongue such as are described by Galen" (probably follicular faucitis).

Obs. xlvii. An instructive case of hemicrania and coryza with "constipation" of the nose.

Obs. lii, p. 140. Hemicrania with swelling of the parotid gland, tinnitus, and unilateral discharge from the ear and nostril.

Obs. liv. Association of hemicrania with loss of olfactory sense, dimness of vision, muscæ volitantes, etc., with an acrid discharge from the nose which stained the handkerchief yellow.

Obs. lvii. Hemicrania, tinnitus aurium, vertigo associated with uterine trouble, sneezing, and a nasal discharge.

Obs. lxxii, pp. 241–244. Vertigo associated with a nasal discharge, dimness of vision, nebulæ before the eyes, tinnitus aurium, wax in the ear, etc.

Obs. lxxv. Vertigo supposed to come from hydrocephalus; says in such an event, if the nostrils are obstructed, give errhines.

Obs. lxxvi, p. 256 *et seq.* Remarkable case of vertigo associated with asthma at night and tendency to nasal hæmorrhage. The paroxysms were mitigated by forcible sneezing or vomiting. Thinks it came from stomachic trouble originally.

Obs. lxxvii. A patient who used tobacco as a sternutatory to excess became subject to nasal hæmorrhage, dyspnœa, occasional deafness with tinnitus aurium, and vertigo with convulsions. The brain was perfectly clear during the paroxysms. Wepfer observes that such affections, if neglected, are apt to degenerate into epilepsy.

Obs. lxxviii. Vertigo, convulsive movements, nightly terrors, etc., in connection with mucus in the fauces, etc.

Obs. lxxix. Hemicrania, vertigo, tinnitus aurium, and tremor of the joints in a person whose nares were sometimes dry, while

at other times they were filled with a limpid mucus which flowed in quantity from the nose, causing redness and excoriation of the latter. In the same observation (p. 296) he speaks of the association of mucous vomiting, fluor albus, recurring coryza, lacrymation, etc., from the suppression of a diurnal coryza.

Obs. lxxx. A most instructive case of a woman, sterile throughout her entire life, who, an habitual sufferer from coryza, was seized at the autumnal equinox with vertigo, tinnitus, troubles about the head (debility, sweating), with a peculiar vibration about the left eye, with obscure vision, and with many-colored nebulæ before the eyes.

Obs. cv, p. 469. Catarrh, gout, coryza, occasional attacks of vertigo, etc.

Obs. cx, pp. 486–488. A man, subject to catarrhal affections of the tonsils and throat, suffered from paroxysmal convulsive movements of the throat and neck, especially of the right side, with a sense of compression and constriction of the larynx.

Obs. cxxi. Nasal polypus, with hæmorrhage from a carious tooth.

Obs. cxcv. *Coryza præputialis.* A patient suffered with chronic coryza, with itching of the nose. He was finally seized with vertigo, weakness of vision, trouble with the memory, a sense of heaviness about the forehead, temples, and orbit, and even in the eyes. To these symptoms were added oppression about the chest, with dyspnœa and headache, especially when going up stairs and in mountain ascents.

Obs. cxcvi, p. 917. *Nervous catarrhalis.* A case of extraordinary interest. A man, aged seventy-six, of medium height, tolerably fleshy and of good color, suffered with prolonged attacks of coughing, which could be increased by an effort of the imagination alone. He was especially subject to the cough in winter, and if, perchance, he got his feet wet, he was immediately seized with a paroxysm, so that he was obliged to be confined to the house during the whole of the winter season. His chief and apparently only trouble was an occlusion of the nares which prevented sleep, or if, by chance, he fell asleep, he was immediately awakened. The nostrils, when freed from mucus, would become patulous, and soon again become occluded. On

examination, the right naris was found occluded by a sort of "sarcoma" of the ala. A similar "sarcoma" occupied the internal surface of the left ala. Neither was so attached as to allow of operation by the knife or cautery (*ferro vel igne*). Whenever he inhaled sharp medicines into the nares, he experienced pain about the cribriform bone and in the occiput. When he lay on the left side, he suffered from pain under the left breast, and was seized with a dreadful sense of oppression, which threatened leipothymia. In other respects he seemed to be well, he lived temperately, his heart never palpitated, he breathed easily in ascending stairs, etc.; he did not suffer from vertigo, headache, etc.

Wepfer, in commenting on this case (p. 918), observes that the chief interest centers in the peculiar narrowness of the nostrils and the nocturnal trouble, and goes into a differential diagnosis. After excluding heart and other troubles, the absence of any vestige of polypus or common sarcoma in the nose and fauces, he concludes that the trouble was due *to a turgescence of the myriad vessels of the spongy bodies* (*corpora spongiosa*), which prevented the air from passing to the os cribriforme, fauces, and palate. The obstruction caused, he thought, retention of mucus in the nostril, which became inspissated by the air coming from the lungs, and which, furthermore, tended to increase the narrowness of the passage.

About the middle of the last century Daniel Langhans* published an elaborate dissertation which deserves special mention, in which he adverts to the *rôle* of the superior cervical ganglion in the evolution of sympathetic (reflex) acts—such as asthma, cough, etc., from irritation of the stomach, uterus, and other organs of the body.

In 1760, Morgagni† explained more fully the sympathy

* "Diss. de consensu part. corp. humani," Gott., 1749; also in Haller's "Collect. dissertat. pract.," vol. vi, No. 220.

† "De sedibus et causis morborum," epist. xiv, 28.

between the nostrils and the diaphragm and the abdominal viscera, calling attention at the same time to the communication between the fifth pair of nerves and the intercostals (Willis). In illustrating his theory, he called attention to the case of a nobleman in whom epileptoid convulsions were preceded by a fetid smell only perceptible to himself; also to that of an old drunkard, who sneezed for two or three years for a quarter of an hour each day, and finally died suddenly. On post-mortem, there was discovered hypertrophy of the heart.* In another place he tells of a man of forty, an habitual drinker, who suffered for some time from dyspnœa (asthma), with frequent and severe fits of sneezing. One day, in a paroxysm of sneezing, he felt a sudden contraction of the heart, sneezed once more, and died.†

In 1761, H. Boerhaave,‡ speaking of sneezing in connection with intestinal parasites, makes the assertion that if a healthy man fasts longer than is his wont, he feels a disagreeable sensation about the præcordia, sneezes, and then vomits. Following Avicenna, he compares the sneezer to the epileptic. In the same year Thomas Bartholini* tells us that, after phlebotomy, when the wound is closed and the cicatrix is yet tender, some are taken with sneezing. In commenting on this remarkable association, he states that he has observed sneezing during coitus. Bartholini also reports‖ an interesting case of a gentleman who suffered from chronic coryza, which rendered sleep and respi-

* *Op. cit.*, xxvii, 28.

† xiv, 27.

‡ "Prælectiones academicæ de morbis nervorum," etc., Lugd. Bat., 1761, tom. ii, p. 845.

* "Historiarum anatomicæ, et medicarum rariorum," cent. v et vi, Ed. Hafniæ, 1761, v, p. 184.

‖ Cent. vi, pp. 260–262.

ration difficult. The cause of the dyspnœa was an oblong, rounded, smooth, white membranous vesicle filled with serum, which at times hung out of the nostril, which could be returned by pressure with the finger, and which interfered with smell and respiration. He goes on to say that the patient experienced relief from the use of sternutatories taken at the advice of friends, and adds that the remedy in such cases is to lie on the side opposite to that of the obstructed naris. In commenting on the diagnosis of the case, he says that Erastus observed that the mamillary processes (olfactory lobes) were protruded into the nose in epilepsy, and concludes that these vesicles are found in the place of the caruncles in the spongy bones (doubtless the corpora cavernosa).

In 1765 appeared a thoughtful treatise on nervous diseases by Robert Whyte,* of Edinburgh, in which he calls attention to the fact that "several delicate women, who could easily bear the smell of tobacco, have been thrown into fits by musk, ambergris, or a pale rose, which to most people are either grateful, or at least not disagreeable" (p. 125). He also mentions similar antipathies in regard to cinnamon and other substances.

Whyte alluded to the sympathies between the larynx, pharynx, and ear, and advanced the doctrine that the impressions made upon the terminal filaments of the nerve (as, for example, in ear cough) must be first referred as a particular feeling to the sensorium commune before being reflected to other parts of the body. He thus made an important step beyond the older doctrine, which ascribed sympathetic affections to the communications between the nerves themselves.

* "Observations on the Nature, Causes, and Cure of those Diseases which have been commonly called Nervous, Hypochondriac, and Hysteric." Second ed., Edinb., 1765, p. 125.

One year later, Daniel Wilhelm Triller, in his curious work,* dwelt upon the so-called idiosyncrasy of olfaction in regard to roses and violets, and related two cases—one of a noble bride, who, sitting surrounded by roses, and weaving them into garlands, became suddenly prostrated, and, falling into the arms of her attendant, who rushed to her assistance, was soon lifeless; the other (described at great length), the history of a case in which death occurred from the odor of violets in a closed chamber.

In the same year the association of stomachic irritation with coryza was discussed at length by Schroeder and Muy,† and Robert Boyle,‡ in the edition of his work on exhalations, etc., published in 1776, treated briefly of the accidents arising from the odor or presence of roses, and toward the close of the last century a number of dissertations appeared on idiosyncrasy in general, in which the antipathy of certain persons to roses is mentioned, and of which the pamphlet of Rahn§ is the most complete and original.

Rahn collected a number of cases from the "Acta and Ephemerides of Natural Curiosities," and from other sources, and founded upon them an interesting dissertation, in which, among other things, he mentions (quoting from the "Journal de médecine," tome xxv, p. 442) hemicrania from dis-

* "Opuscula medica ac medico-philologica." Francofurti et Lipsiæ, 1766, vol. i, Diss. ix, p. 257 *et seq.*

† "Diss. de amplitu generis febris biliosæ." Gotting., 1766, § 12.

‡ "Exercitationes de atmosphæris corporum consistentium, deque mira subtilitate, determinata natura ac insigni vi elaboranti." Lugd. Bat., 1776, cap. vi, p. 212 *et seq.*

§ "Exercitationum physicarum de causis physicis nasum illius, tum in homine, tum inter homines, tum denique inter cetera naturæ corpora sympathiæ secundæ." Turici, 1788. Rahn quotes from Baumer the case of a youth taken with periodical emprosthotonus from the odor of musk.

case of the nose in the following sentence: "*Aliquando periodicam hemicraniam coryzæ antecedunt et ægros fallunt, ut hanc pro illius causa habeant cum tamen spastica utriusque sit origo.*" He explains the sympathies of the nose (on the nerve theory of Willis and Vieussens) by the intimate connection between the nasal nerves and the intercostals (of Willis).

A number of special treatises followed the *brochure* of Rahn, which added little or nothing, however, to what was already known upon the subject, and consisted for the most part of the transcription of the views and cases of those which preceded them. The most elaborate of these are the dissertations of Michell* and Veegens.† To these writers I am indebted for reference to a very interesting case of catarrh with convulsions and hemicrania from disease of the uterus and ovaries observed by Bauhin,‡ and to one reported by Zimmerman, in which acute pain in the nose followed excessive venery (tribadismus). Veegens devoted considerable space to the sympathy of the stomach and nose, borrowing a great deal from Rahn without acknowledgment.

Ias# (1784), and afterward Schmidt‖ (1795), discussed at great length the same subject, without adding anything novel or of special interest. The latter, however, refers to the well-known sympathy between the nose and eyes in

* In Schlegel's "Sylloge selectiorum opusc. de mirabile sympathiæ quæ partes inter diversas corporis humani intercedit." Lipsiæ, 1787.

† "Diss. inaug. med. de sympath. inter ventriculum et caput, præcipæ in statu præternaturali." Lugduni, 1784.

‡ This case is also in Lieutaud's "Histor. an. med.," Obs. 1507, vol. i.

"Diss. de mirabili quæ pectus inter et ventriculum intercedit sympath." Lugd. Bat., 1784.

‖ "Diss. inaug. de consensu part. corporis humani inter se." Halæ, 1795.

the case of sneezing from sudden exposure to light, and adds that "many diseases of the eyes may be cured by errhines."

In 1785 Tissot* called attention to the fact that very violent paroxysms of migraine are sometimes terminated by slight hæmorrhage from the nose, and related the case of a man of his acquaintance, an habitual sufferer from migraine on the same side in which he had a polypus in the nose, to which it owed its origin.† To Tissot I am indebted for reference to two interesting cases of migraine. The first is taken from the "Sepulchretum" of Mangetus.‡ A woman complained of a migraine of the right side. Bleeding, cephalic pills, etc., were of no avail. She asserted that she felt a vertigo with each movement of the head, and that it felt like a bladder filled with water. Vesicatories were placed behind the ears, and tents dipped in a volatile essence were introduced into the nostrils, which latter produced a prodigious discharge of serum and the cure of the affection. The second is taken from Sauvages: A soldier received a wound of the head at Strasburg, and suffered from terrible migraine for three years. The disease resisted all remedies, but was finally cured by an abundant discharge of pus from the nose, lasting twenty-four hours. Tissot includes this case under that variety which depends on disease of the accessory sinuses.*

In 1790 Testa‖ related the case of a woman who had

* "Œuvres," Lausanne, 1788, vol. ix. "Traité des nerfs et de leurs maladies." A Genève, 1785, chap. xxii. "De la migraine," p. 103.

† *Op. cit.*, p. 169. ‡ Tom. i, p. 16.

* The dependence of migraine on the presence of parasites in the nostrils has been familiar for centuries. See Pherapont, "Literatura medica digesta," tom. iv, p. 314, and note 1, p. 216. Ludwig Frank, "Med. Chir. Ztg.," Salzburg, iv Bd., 1816.

‖ "Bemerkungen über die periodische Verdunkelungen, etc.," Leipsic, 1790, p. 225.

never menstruated, and who was taken every third day with a paroxysm of sneezing so that she could neither eat, drink, nor sleep.

In 1797 we find Darwin * reporting a case of nasal polypi due to the irritation of worms in the intestines, and in 1801 Gruner † alludes to sneezing in hysterical women as a prodrome of the attack, and in retention of the afterbirth; to the same reflex in the dissipation of cough, hiccough, and allied evils; to its occurrence in those suffering from hernia, in pregnancy, and skin eruptions. This writer says ‡ the nose becomes warm and red in the hysterical, in women at the menstrual period, and in the victims of onanism.

In 1802 Heberden # observes that "a large suppuration of an inflamed sore throat has been attended with a considerable quantity of pus at the bottom of the vessel which held the urine, for three or four days. As soon as the abscess broke and discharged itself, this purulent appearance in the urine ceased." Heberden, as is well known, was supposed to have approached very nearly the discovery of the disease known as "hay fever." ‖

In 1804, Deschamps △ maintained the view that hemicrania was a disease of the frontal sinus, and related some experimental observations illustrative of the great sensibility of this cavity; and in the same year Portal ◊ observed that he had seen pains, vertigo, and even epileptic affections, in

* "Zoonomia," part ii, vol. 2, p. 73, Phila. ed., 1818.

† Christian Gottfried Gruner, "Physiologische u. pathologische Zeichenlehre," etc. Jena, 1801, p. 122.

‡ *Op. cit.*, p. 377.

William Heberden, "Commentaries on the History and Cure of Diseases," London, 1802; also published in Latin, chap. 101, p. 472.

‖ *Op. cit.*, chap. 24, pp. 135, 136.

△ "Traité des mal. des fosses nasales," etc., Paris, 1804.

◊ "Cours d'anat. méd.," etc., Paris, 1804, t. iv, art. "Nez," p. 491.

connection with disease of the nasal membrane, and referred to a case accidentally cured by the fumes of cinnabar, given with other intention.

In 1818, Josef Frank,* in his chapter on headache, says: "*Nares plerumque sicci, aeri impervii, nonnunquam serum acre largientes. Sapor interdum delitus, sæpe depravatus, amarus scilicet, acidus, quandoque metallicus. In nonnullis, screatio frequens, stridor dentium, tumor parotidis. Loquela nonnunquam interrupta*, etc." Frank also called attention to what he termed rheumatic or catarrhal vertigo.†

This brings the history of the pathological nasal reflex down to the year 1819, when the affection known as "hay fever" is supposed to have been discovered by Bostock. That this latter disease was probably recognized centuries ago, I have endeavored to show in a former publication,‡ in which is given what may be considered its earlier literature. Those who desire to investigate also the ancient history of the nasal "idiosyncrasies" may consult this article and also the list of essays and cases embodied therein, which have been selected from a large number of dissertations and contain the gist of what is known upon the subject.

As, in the foregoing historical study, I have had no guide beyond my own literary notes, the task has been a laborious one, and one which I feel has been but imperfectly accomplished. If, however, I shall have rescued from oblivion a portion of the older literature of the subject, or shall stimulate others to more elaborate and exhaustive research, my labors will be abundantly repaid.

The preparation of both historical sketches would have

* "Praxeos medicæ universæ præcepta," Lipsiæ, 1818, pars ii, vol i, sect i, cap. 2, § viii, p. 162.

† *Op. cit.*, p. 547.

‡ "Am. Journ. of the Med. Sci.," January, 1886.

been impossible were it not for the unrivaled facilities for literary research offered by that monument of industry, the library of the Surgeon-General's Office at Washington; and I desire to acknowledge my indebtedness to the authorities of that institution for special privileges in gaining access to many rare works which otherwise would have been inaccessible.